

INTERNATIONAL SEARCH REPORT

International application No.

PCT/US04/21371

A. CLASSIFICATION OF SUBJECT MATTER

IPC(7) : G08B 13/08

US CL : 340/546,545.4,545.5,566,539.1,692,522,524,693.5; 310/311; 348/155

According to International Patent Classification (IPC) or to both national classification and IPC

B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)

U.S. : 340/546,545.4,545.5,566,539.1,692,522,524,693.5; 310/311; 348/155

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practicable, search terms used)

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X — Y	US 4,337,462 A (LEMELSON) 29 June 1982, see the Abstract, Figs. 1-3 and col. 2, line 16 to col. 3, line 65.	1,14,67 — 4
X — Y	US 5,317,305 A (CAMPMAN) 31 May 1994, see the Abstract, Figs. 6B and 12, and col. 7, line 46 to col. 9, line 2.	55,57-59,66 — 4
X — Y	US 5,811,910 A (CAMERON et al) 22 September 1998, see the Abstract, Figs. 1-4B, and col. 2, line 1 to col. 3, line 26.	55-56,65 — 4
X	US 4,189,655 A (BRUEL) 19 February 1980, see the Abstract, Figs. 2-3 and col. 2, line 26 to col. 4, line 23.	55-56
X	US 4,742,336 A (HALL et al) 03 May 1988, see the Abstract, Figs. 1-2, col. 4, line 52 to col. 6, line 19, and col. 9, lines 9-30.	11-13,54
X	US 5,200,735 A (HINES) 06 April 1993, see the Abstract, Figs. 1-7 and 11, and col. 3, line 12 to col. 8, line 20.	21-22



Further documents are listed in the continuation of Box C.



See patent family annex.

* Special categories of cited documents:	
"A" document defining the general state of the art which is not considered to be of particular relevance	"T" later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention
"B" earlier application or patent published on or after the international filing date	"X" document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone
"L" document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified)	"Y" document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art
"O" document referring to an oral disclosure, use, exhibition or other means	"&" document member of the same patent family
"P" document published prior to the international filing date but later than the priority date claimed	

Date of the actual completion of the international search

04 December 2004 (04.12.2004)

Date of mailing of the international search report

12 JAN 2005

Name and mailing address of the ISA/US

Mail Stop PCT, Attn: ISA/US
Commissioner for Patents
P.O. Box 1450
Alexandria, Virginia 22313-1450

Facsimile No. (703) 305-3230

Authorized officer

Thomas J. Mullen, Jr.

Telephone No. 571-272-2600

INTERNATIONAL SEARCH REPORT

International application No.
PCT/US04/21371

C. (Continuation) DOCUMENTS CONSIDERED TO BE RELEVANT

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	US 5,001,461 A (VROOM et al) 19 March 1991, see the Abstract, Figs. 4-5, and col. 2, line 28 to col. 3, line 41.	36
X	US 2002/0113704 A1 (HESS) 22 August 2002, see the Abstract, Figs. 1, 4 and 5, and paragraphs 0020 and 0038.	36
X	US 5,963,131 A (D'ANGELO et al) 05 October 1999, see the Abstract, Figs. 1, 3 and 4, col. 5, line 6 to col. 6, line 36, col. 7, line 65 to col. 8, line 37, and col. 10, lines 8-24.	36
X	US 4,167,733 A (KRAUSE et al) 11 September 1979, see the Abstract and Figs. 3, 4 and 7.	36
X	US 5,587,701 A (HESS) 24 December 1996, see Figs. 1 and 4, and col. 2, line 56 to col. 3, line 61.	38
X	US 6,052,052 A (DELMONACO) 18 April 2000, see the Abstract, Figs. 1-2b, col. 2, line 42, and col. 3, line 65 to col. 5, line 35.	38

Best Available Copy